CLAIMS:

1. A method of separating a hydrophilic organic compound from an aqueous liquor comprising the steps of:

(a) intermixing a sufficient quantity of a glycol ether with the aqueous liquor at a first temperature to form a suspension comprising an aqueous raffinate phase and a glycol ether extract phase comprising said glycol ether, water in saturated quantity, and a portion of the hydrophilic organic compound, the glycol ether having the formula

$$R'\text{-}(OCHR''CHR'')_n\text{-}O\text{-}R'''$$

wherein R' is an alkyl group of 1 to 8 carbon atoms; R'' is, independently in each occurrence, hydrogen, methyl or ethyl; R''' is hydrogen, an alkyl group having from 1 to 4 carbon atoms, a propionyl or an acetyl group; and n is an integer between 1 and 4; with the proviso that R''' is methyl when R' and R'' are each methyl group, and wherein the glycol ether has an inverse solubility in water and the partition ratio, value K, for the hydrophilic organic compound is greater than 0.1;

(b) separating the glycol ether extract phase formed in step (a) from the aqueous raffinate phase;

(c) heating the glycol ether extract phase obtained in step (b) to a second temperature which is higher than the first temperature to form a suspension comprising an aqueous extract phase containing a portion of the hydrophilic organic compound and a glycol ether raffinate phase; and

(d) separating the glycol ether raffinate phase formed in step (c) from the aqueous extract phase.

2. The method of Claim 1, wherein the step (c) is conducted in the presence of a hydrophobic organic solvent selected from the group consisting of an alcohol having from 4 to 14 carbon atoms, a ketone having from 4 to 14 carbon atoms, a chlorinated hydrocarbon having from 2 to 6 carbon atoms, an aromatic compound having from 6 to 12 carbon atoms, and an ether having from 6 to 19 carbon atoms, and blends thereof.

3. The method of Claim 1, wherein the intermixing of the glycol ether with the aqueous liquor in step (a) is conducted at a temperature that is no more than 30 centigrade degrees above the lower critical solution temperature (LCST).

4. The method of Claim 1, Claim 2 or Claim 3, wherein step (d) is replaced with the following steps:

(e) intermixing a sufficient quantity of water with the mixture formed in step (c) to form a mixture of a glycol ether raffinate phase further depleted in the hydrophilic organic compound and an aqueous extract phase containing the added water and additional hydrophilic organic compound; and

(f) separating the aqueous extract phase formed in step (e) from the glycol ether raffinate phase.

5. The method of any one of Claims 1 to 4, wherein the steps of intermixing and separating phases are conducted in counter-current multistage extraction equipment.

6. The method of any one of Claims 1 to 3, wherein the aqueous raffinate phase separated in step (b) or the aqueous extract phase separated in step (d) are further contacted with a hydrophobic organic solvent or blends thereof to recover residual glycol ether.

7. The method of Claim 4, wherein the aqueous extract phase separated in step (f) is further contacted with a hydrophobic organic solvent or blends thereof to recover residual glycol ether.

8. The method of any one of Claims 1 to 7, wherein the hydrophilic organic compound is a compound selected from the group consisting of carboxylic acids, sulfonic acids, polyhydroxy compounds, amino acids and amides.

9. The method of Claim 8, wherein the hydrophilic organic compound is selected from the group consisting of formic acid, acetic acid, propionic acid, butyric acid, lactic acid, citric acid, benzoic acid, ascorbic acid, adipic acid, succinic acid, methacrylic acid, lauric acid, stearic acid, glycolic acid, glycerin, glucose, caprolactam, 1,3-propanediol, 1,2-propanediol, 2,3- butanediol, xylitol, p-toluene sulfonic acid, methane sulfonic acid, and dodecylbenzene sulfonic acid.

10. The method according to any one of Claims 1 to 7, wherein the partition ratio, K value, is greater in step (a) than in step (c).

11. The method of Claim 2, Claim 6 or Claim 7, wherein the hydrophobic organic solvent is selected from the group consisting of 1-octanol, 2-ethylhexanol, 2-pentanone, 2-nonanone, diisobutylketone, methylisobutylketone, methylene chloride, toluene, dichlorobenzene, and di-n-butyl ether and blends thereof.

12. The method according to any one of Claims 1 to 7, wherein the glycol ether is selected from the group consisting of dipropylene glycol ethyl ether, tripropylene glycol ethyl ether, propylene glycol isopropyl ether, dipropylene glycol isopropyl ether, tripropylene glycol isopropyl ether, propylene glycol n-propyl ether, dipropylene glycol n-propyl ether, tripropylene glycol n-propyl ether, propylene glycol t-butyl ether, dipropylene glycol t-butyl ether, tripropylene glycol t-butyl ether, propylene glycol n butyl ether, dipropylene glycol n-butyl ether, tripropylene glycol n-butyl ether, propylene glycol n-pentyl ether, propylene glycol n-hexyl ether, butylene glycol methyl ether, dibutylene glycol methyl ether, ethylene glycol n-butyl ether, ethylene glycol n-pentyl ether, ethylene glycol n-hexyl ether, ethylene glycol n-heptyl ether, ethylene glycol 2-ethylhexyl ether, diethylene glycol n-hexyl ether, propylene glycol methyl ether acetate, propylene glycol ethyl ether acetate, propylene glycol isopropyl ether acetate, propylene glycol n-propyl ether acetate, propylene glycol n-butyl ether acetate, dipropylene glycol methyl ether acetate, dipropylene glycol ethyl ether acetate, ethylene glycol n-butyl ether acetate, propylene glycol isobutyl ether, dipropylene glycol isobutyl ether, tripropylene glycol isobutyl ether, ethylene glycol t-butyl ether, ethylene glycol isobutyl ether, ethylene glycol ethyl ether acetate, ethylene glycol isobutyl ether acetate, diethylene glycol ethyl ether acetate, dipropylene glycol dimethyl ether, and diethylene glycol n-butyl ether acetate and blends thereof.

13. A method of separating a hydrophilic organic compound from an aqueous liquor comprising the steps of:

(a) intermixing a sufficient quantity of a glycol ether with the aqueous liquor at a temperature not more than 30 centigrade degrees above the lower critical solution temperature (LCST) to form a suspension comprising an aqueous raffinate phase and a glycol ether extract phase comprising said glycol ether, water in saturated quantity, and a portion of the hydrophilic organic compound, the glycol ether having the formula

$$R'\text{-}(OCHR''CHR'')_n\text{-}O\text{-}R'''$$

wherein R' is an alkyl group of 1 to 8 carbon atoms; R'' is, independently in each occurrence, hydrogen, methyl or ethyl; R''' is hydrogen, alkyl group having from 1 to 4 carbon atoms, a propionyl or an acetyl group; an n is an integer between 1 and 4;

with the proviso that R''' is methyl when R' and R'' are each methyl, and wherein said hydrophilic organic compound is selected from the group consisting of citric acid, lactic acid, formic acid, acetic acid, succinic acid, ascorbic acid, 1,3-propanediol, 1,2-propanediol, glycerin, and *p*-toluene sulfonic acid; and

(b) separating the glycol ether extract phase formed in step (a) from the aqueous raffinate phase.

14. The method according to Claim 13, wherein said temperature is not more than 20 centigrade degrees above the LCST.

15. The method of Claim 13 or Claim 14, wherein the steps of intermixing and separating phases are conducted in counter-current multistage extraction equipment.